

1997



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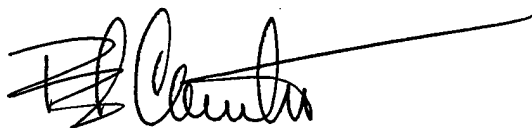
FOREWORD

The AFMC Studies and Analyses Office (AFMC SAO/XPS), a field operating agency under HQ AFMC/XP, conducts and sponsors studies and research of significant materiel issues. Our goal is to provide analytic solutions for improved business practices. We focus our efforts on relating materiel resource decisions to impacts on business performance and weapon system availability. This enables AFMC to prioritize and justify its investments in resources. We work closely with our customers as we perform studies to ensure we have a healthy balance between the rigorous application of operations research techniques and practical solutions that can be implemented.

This is our fourteenth Annual Report. It includes descriptions of the major projects we worked on in 1997 and our plan for 1998. If you have any comments, or suggestions for further research, contact us at (937) 257-3201 or DSN 787-3201. Our FAX is (937) 656-1498 or DSN 986-1498.



VICTOR J. PRESUTTI, JR.
Chief, Studies and Analyses Office
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We invite you to visit the SAO/XPS web site at:
<http://www.wpafb.af.mil/HQ-AFMC/XP/sao/>

EXECUTIVE SUMMARY

The AFMC Studies and Analyses Office (AFMC SAO/XPS) conducts and sponsors studies and research of significant materiel issues. We use, modify, and develop new or improved methods, models, and tools to manage materiel resources.

Our goal is to quantify the relationships between alternative materiel resources and the resultant aircraft availability and sustainability so that AFMC can prioritize and justify its investments in those resources. We work toward this goal by performing studies for our customers and by pursuing a few internally developed projects that have significant potential for providing valuable insights into these relationships.

The Command is headed toward a renewed focus on customer support while operating in a business-like manner with solid financial planning and control. Everyone in SAO is working hard in helping this happen.

Last May, the Air Force implemented our new, much improved method of setting worldwide stock levels for the \$16 billion parts inventory needed by the warfighters to keep their airplanes flying (*Retail and Wholesale Stockage Levels for the Air Force*). A major AFMC accomplishment has been the progress made in closely linking depot repair and distribution actions to warfighter customer needs. This process, called EXPRESS, is being implemented to tell the maintenance shops at the depots and at contractor facilities how to apply their resources to produce the most cost-effective mix of serviceable parts. This will direct about \$2 billion in repair per year. Several members of SAO have crucial roles in this effort (*EXPRESS Implementation Support*).

Logistics Response Time (LRT) is an indication of how responsively the depots are supporting customers. We're working with LSO to facilitate LRT tracking by providing monthly summary reports and drill-down capability (*AFMC Logistics Response Time*). SAO continued to forecast depot workload factors and added a wartime depot surge calculation (*Depot Maintenance Activity Group (DMAG) Workload Forecast; DMAG Surge Program*). Additionally, SAO helped AFMC decide whether to pay for potential improvements in contract repair times (*CREP Cost-Benefit Analysis*).

Falling Mission Capable rates, driven by shortages in supply and maintenance, received much attention last year. The buy and repair funding needed to catch up is referred to as the "bow wave". SAO was the Secretariat of a team working on long-term solutions, with membership from retired Air Force senior logisticians, other services, and the civilian sector. We've also worked extensively on defining the bow wave cost and identifying supply chain management improvements that need to be made (*Bow Wave*). We helped develop a method for tracking past and future prices that AFMC charges customers in managing initiatives to reduce prices (*Market Basket Analysis*). AFMC applied banding to allocate limited funding for FY97. SAO developed a method to allocate the obligation authority by Air Logistics Center and weapon system for Annual Operating Budget number 3 (*Reparable Stock Division (RSD) Banding for Effectiveness*).

The Information Management Business Area asked SAO to review its Strategic Plan and grade it against the Congressional criteria for quality. We gave them many suggestions for improvements (*Assessing the Information Management Business Area (IMBA) Strategic Plan*). SAO is also supporting the development of an interactive database for Program Objective Memorandum (POM) inputs from the business areas (*Program Objective Memorandum (POM) Development*).

SAO is part of a Command team working on delivering a dramatically improved method of computing the number of initial spare parts that need to be purchased for newly acquired weapon systems (*Initial Sparing*). We also supported the Global Engagement wargame last year by providing capability assessments which consider logistics constraints (*Global Engagement Wargame Analysis*) and resolved numerous technical issues related to weapon system spares requirements and readiness (*Weapon System Management Information System (WSMIS) Support*).

In 1998 we plan to devote a greater portion of our effort to business areas other than supply and maintenance. We completed discussions with all business areas and are looking for opportunities to help where possible. Additionally, we will continue to respond to requests for short-term support and consultation on various issues.

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THE STUDIES AND ANALYSES OFFICE

The function of the AFMC Studies and Analyses Office (AFMC SAO/XPS) is to provide a source of operations research skills for the Headquarters. We are a Field Operating Agency (FOA) under HQ AFMC/XP. Prior to August 1995 we were known as the Management Sciences Division (HQ AFMC/XPS). Although we are a part of the Directorate of Plans and Programs, we often perform our studies and analyses for clients outside the Directorate.

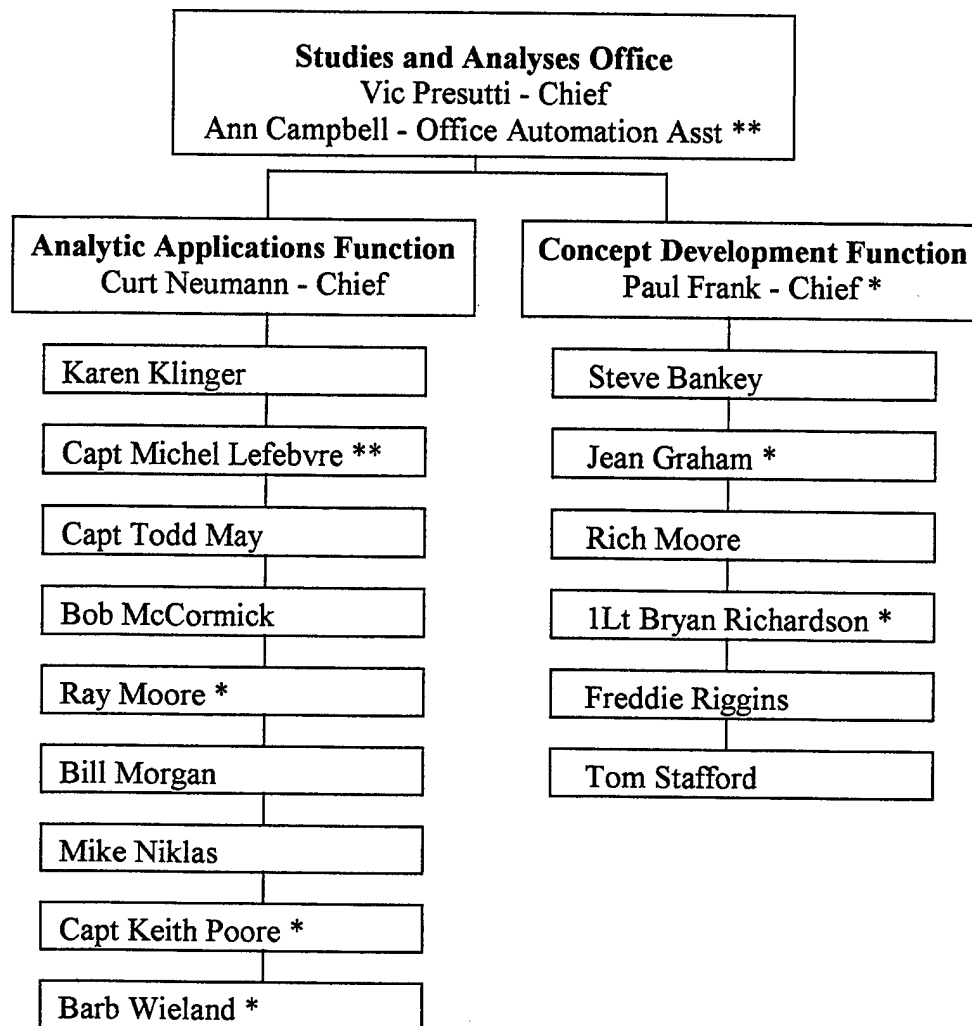
The majority of our analysts have advanced degrees in technical areas such as operations research, mathematics, engineering, and management sciences. Each new analyst is expected to have, or obtain within a three to four year training period, an appropriate advanced degree.

Our emphasis has been on the application of mathematical modeling techniques to improve the management of materiel resources. We have focused our efforts on relating materiel resource decisions to resultant impacts on aircraft availability so that AFMC can prioritize and justify its investments in those resources. We work toward accomplishing this by performing studies for our customers and by pursuing a few internally developed projects that have significant potential for providing valuable insights into these relationships. The office shares results and works closely with other governmental and private analysis organizations. We actively assist the AFMC staff and other Air Force agencies in incorporating improved methodologies in their management of materiel resources.

The Studies and Analyses Office is organized into two functions. The Analytic Applications Function's authorized staffing consists of six operations research analysts and a logistics staff officer. The Concept Development Function's authorized staffing consists of six operations research analysts. There is close cooperation and interaction between the two functions. Most of our analyses focus on issues involving resource allocation, budgeting, inventory requirements computations for peace and war, the prioritization of depot repair and distribution, and the assessment of weapon system capability.

This office has the Air Force technical responsibility for four models that relate weapon system component inventories and readiness. The Aircraft Availability Model (AAM) is embedded in the Recoverable Item Requirements System (D041). It incorporates aircraft availability objectives into the computation process for peacetime operating stock. The Aircraft Sustainability Model (ASM) is the computational technique employed by the Weapon System Management Information System (WSMIS) to identify wartime spares requirements. It is also used for determining initial spares requirements. The Dyna-METRIC model is the wartime capability assessment tool used by WSMIS. Additionally, we have the technical responsibility for the Distribution and Repair In Variable Environments (DRIVE) model. This model is used to prioritize the repair and distribution of recoverable items based upon the marginal gain in operational capability.

The organization and 1997 personnel of the Studies and Analyses Office are as follows:



* These individuals left SAO/XPS in 1997 due to retirement, separation, or transfer.

** These individuals joined SAO/XPS in 1997.

The next two sections of this report contain specifics of our 1997 accomplishments and our planned program for 1998.

ACCOMPLISHMENTS IN 1997

This is an overview of SAO's significant achievements for 1997.

Last May, the Air Force implemented our new, much improved method of setting worldwide stock levels for the \$16 billion parts inventory needed by the warfighters to keep their airplanes flying (*Retail and Wholesale Stockage Levels for the Air Force*). A major AFMC accomplishment has been the progress made in closely linking depot repair and distribution actions to warfighter customer needs. This process, called EXPRESS, is being implemented to tell the maintenance shops at the depots and at contractor facilities how to apply their resources to produce the most cost-effective mix of serviceable parts. This will direct about \$2 billion in repair per year. Several members of SAO have crucial roles in this effort (*EXPRESS Implementation Support*).

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SAO is part of a Command team working on delivering a dramatically improved method of computing the number of initial spare parts that need to be purchased for newly acquired weapon systems (*Initial Sparing*). We also supported the Global Engagement wargame last year by providing capability assessments which consider logistics constraints (*Global Engagement Wargame Analysis*) and resolved numerous technical issues related to weapon system spares requirements and readiness (*Weapon System Management Information System (WSMIS) Support*).

In addition to these major areas, the following descriptions of our 1997 accomplishments include numerous other analysis issues we worked.

TITLE: *Retail and Wholesale Stockage Levels for the Air Force*

CUSTOMERS: HQ AFMC/LGI/LGL/LGS, HQ USAF/ILS, MAJCOM/LGS

OBJECTIVE: Provide technical support during the testing and implementation of Readiness-Based Leveling (RBL). RBL integrates retail (base) and wholesale (depot) environments while it determines the best base stockage levels and depot working levels to achieve the lowest expected worldwide base backorders.

RESULTS: The RBL model was successfully implemented in May 1997 through D035E, the Readiness-Based Leveling System. Following implementation, we made several adjustments to the system based upon feedback from the field. We worked with the AFLMA to improve the model's speed and accuracy and developed updated model logic to identify to item managers those items that appeared to be potential support problems. We also led the design effort for a new forward-looking capability that will do a better job of setting levels for units that move. In a cooperative analysis with the AFLMA, we completed the work to determine how best to add logic to RBL to set depot retail levels. This major new capability was implemented in the January 1998 RBL cycle.

ANALYSTS: Bob McCormick and Capt Todd May

TITLE: *EXPRESS Implementation Support*

CUSTOMERS: HQ AFMC/LGI, ALCs, MAJCOMs

OBJECTIVE: Actively support implementation of the Execution and Prioritization of Repair Support System (EXPRESS) to manage the repair and distribution of recoverable items. The goal of EXPRESS is to closely link recoverable item depot repair and distribution actions to operational customers' needs. We are the Air Force technical OPR for the prioritization model embedded in the EXPRESS system.

RESULTS: We provided EXPRESS support in a number of ways. Our work involved analysis, development, and model modification to correct existing problems. We developed a technique that enables EXPRESS to better focus on weapon system support. The original technique, called the Weapon System Burn Rate, was prototyped by WR-ALC. We then developed a further refinement called Single Prioritization Across Weapon Systems (SPAWS). SPAWS provides the capability to prioritize depot resupply actions across weapon systems in a manner consistent with weapon system priorities. We developed new model logic to properly recognize MICAP conditions caused by indentured shop replaceable units (SRUs). We helped WR-ALC identify interim solutions for prioritizing items with long flow/repair times and began work on a permanent solution. For this study, we are also developing a capability to evaluate the impact of alternative business rules on weapon system availability.

Our work also involved EXPRESS system and policy issues. Contractor and organic repair was handled separately in the original EXPRESS design and we helped develop an approach to integrate them into one process. We also helped develop the system changes needed to move EXPRESS distribution functionality to the AFMC distribution system, D035A. We helped organize an effort to develop a repair planning module that will assist materiel, maintenance, and financial managers with getting the resources in place to execute needed repairs. Numerous items have multiple organic and contract sources of repair and we defined logic to handle these in EXPRESS. We designed an improvement to the original method of spreading repair funding across a year (referred to as the burn rate) that is more equitable for high repair cost items. An EXPRESS Technical Renovation is underway to meet year 2000 compliance, improve system performance, reduce operating costs, and achieve OSD technical requirements (DII/COE). We are a member of the team developing the specifications.

ANALYSTS: Bob McCormick, Barb Wieland, Karen Klinger, Rich Moore,
Capt Mike Lefebvre, Curt Neumann, and Ray Moore

TITLE: *AFMC Logistics Response Time*

CUSTOMERS: AFMC CC, HQ AFMC/LG, ALCs, MAJCOMs

OBJECTIVE: Provide a way for AFMC and MAJCOMs to monitor customer wait times associated with orders for recoverable and consumable items from depots.

RESULTS: We met with AFMC/CC to define the Logistics Response Time (LRT) reporting requirement and then worked with AFMC LSO to ensure that the reports could be generated quickly and accurately. We provided data that relates parts to weapon systems and participated in a system test. In 1998, we'll focus on helping LSO establish a web site for LRT information and assisting users of this system.

ANALYSTS: Mike Niklas and Vic Presutti

TITLE: *Depot Maintenance Activity Group (DMAG) Workload Forecast*

CUSTOMER: HQ AFMC/LGP

OBJECTIVE: Forecast peacetime depot workload (man-hour) requirements for Depot Maintenance Activity Group planning.

RESULTS: Last year we developed an algorithm for projecting total peacetime depot workload based on aircraft inventory and flying hours. Coefficients determined from historical data were applied against future weapon system flying hours and inventory from the President's Budget. The coefficients are recomputed after the President's Budget comes out in the spring. The DMAG workload forecasts are generated for one and two years into the future. The 1997 forecasts are 28.03 million man-hours for FY98 and 28.21 million man-hours for FY99. We will continue to generate DMAG workload forecasts on an annual basis.

ANALYSTS: Freddie Riggins and Paul Frank

TITLE: *DMAG Surge Program*

CUSTOMER: HQ AFMC/LGP

OBJECTIVE: Facilitate the computation of depot surge workload requirements for wartime, modernize the existing DMAG surge software and re-host to a personal computer platform.

RESULTS: We reverse-engineered existing DMAG Surge software and identified the logical rules it uses. Following LGP's verification of the logic, we redeveloped the software in a modern programming language. Now it can be easily run on a personal computer. For each depot and major end item, the DMAG surge report provides an estimate of the number of repair hours per month associated with surging the depot during a one-year war.

ANALYST: Freddie Riggins

TITLE: *CREP Cost-Benefit Analysis*

CUSTOMER: HQ AFMC/LGI

OBJECTIVE: Help AFMC decide whether to pay for improvements in contract repair responsiveness. The Contract Repair Enhancement Program (CREP) is developing processes to improve contract repair responsiveness. Depot personnel have the responsibility of evaluating the cost-benefit ratios associated with asking contractors to shorten their repair cycle times.

RESULTS: We continued to assist users of the cost-benefit analysis tool that we developed last year. It uses D041 asset, factor, and requirements data to provide an objective evaluation of proposed CREP improvements. We provided users with updates to the D041 data and made a number of enhancements to the software to further simplify its use.

ANALYST: Mike Niklas

TITLE: *Bow Wave*

CUSTOMERS: AFMC/CC, HQ AFMC/LG

OBJECTIVE: Readiness problems related to spare parts shortages were major issues at CORONA FALL in November 1997 and were believed to be due in part to funding shortfalls. In preparation for CORONA SOUTH in February 1998, the AFMC commander directed that the funding requirement for buy and repair backlogs (referred to as the bow wave) be quantified and actions identified that can be taken immediately if additional funding is made available. He also directed the establishment of a review board to recommend actions that can be taken in twelve to twenty-four months to improve Air Force supply chain management.

RESULTS: We organized the Repairable Spares Management (RSM) Board and acted as the board's Secretariat. The board membership consisted of retired Air Force senior logisticians, commercial representatives, and senior logisticians from other services. The board assessed the Air Force's supply chain management process and proposed strategic changes that can be deployed in twelve to twenty-four months. We also assisted HQ AFMC/LG in quantifying the recoverable item bow wave for repair and buy and helped develop a questionnaire sent to the centers to identify their primary supply chain management constraints on important readiness items. We analyzed program, supply, and maintenance data to help prepare the presentation for CORONA SOUTH.

ANALYSTS: Vic Presutti, Curt Neumann, Bill Morgan, Mike Niklas, and Bob McCormick

TITLE: *Market Basket Analysis*

CUSTOMER: AFMC/CC

OBJECTIVE: The Commander of AFMC has an initiative to reduce prices AFMC charges customers for recoverable items. Our objective was to establish a "market basket" of reparable items to measure past and future prices.

RESULTS: We identified a "market basket" of items, computed their prices from FY93 to FY97, and produced tables that show the trends in these prices. For the FY98, we redefined the "market basket" by forecasting sales to identify about 10% of the items expected to account for almost 90% of the dollar sales for recoverable items customers buy from AFMC. This effort will enable us to track future prices by various categories to include customers, weapon systems, and ALCs.

ANALYSTS: Bill Morgan and Vic Presutti

TITLE: *Reparable Stock Division (RSD) Banding for Effectiveness*

CUSTOMERS: HQ AFMC/LG/FM/DR

OBJECTIVE: Assist AFMC in allocating updated FY97 Obligation Authority (OA) needed to buy and repair recoverable spares. Banding is a tool used by the Command to allocate obligation authority for spare parts to the air logistics centers when there is not enough funding available to satisfy the total requirement.

RESULTS: In 1997, we used banding to allocate updated FY97 Obligation Authority (OA) by air logistics center (ALC) and weapon system for Annual Operating Budget (AOB) No. 3. We also responded to numerous questions from the Air Staff about a new methodology we implemented in 1996. This involved a major change that enabled us to consider non-demand-based requirements, which make up a large portion of the total requirement. One issue with the Air Staff was that high condemnation items (such as some engine parts) might not be treated fairly with this approach. Our analysis showed that, in general, items with condemnations did receive a slightly lower level of support. The trade-off was better support to high priority weapon systems like the C-5 and E-3. This is consistent with the intent of banding which is to provide better support to weapon systems designated as higher priority. We did recommend placing the F100 and F110 engines into a higher band because of the condemnation issue. Banding was not used in the allocation of FY98 OA. Instead, Unit Cost Targets (UCTs) were used to establish the Cost Authority for the ALCs.

ANALYST: Bill Morgan

TITLE: *Assessing the Information Management Business Area (IMBA) Strategic Plan*

CUSTOMER: HQ AFMC/SC

OBJECTIVE: HQ AFMC/SC asked us to provide an assessment of their first strategic plan based on criteria developed by Congress and the Office of Management and Budget (OMB). They also asked us to identify weak areas in the plan and provide suggestions for improvement. HQ AFMC/SC will use these results when they update the strategic plan next year.

RESULTS: This project began late in 1997 and will continue through March 1998 when IMBA begins work on revising their strategic plan. The IMBA Team is a decision making body within the command responsible for managing information in support of the AFMC Business Areas and support functions. HQ AFMC/SC chairs this team, which consists of representatives from each business area and staff advisory directorate, along with Chief Information Officers (CIOs) and Chief Operating Officers (COOs) at AFMC field locations. We will provide a report and a briefing to IMBA management in March 1998.

ANALYST: Tom Stafford

TITLE: *Program Objective Memorandum (POM) Development*

CUSTOMER: HQ AFMC/XPP

OBJECTIVE: Provide on-site support for development of the AFMC FY00-05 Program Objective Memorandum (POM). AFMC/CC directed the Command to focus management attention on controlling costs which led to a new process for developing the FY00-05 AFMC POM. This new process emphasized Chief Operating Officers making commitments to reduce the cost of doing business in the POM. This "bottom-up" POM build necessitated a more structured and robust data management capability to be used in developing the POM.

RESULTS: We built databases containing baseline and recommended POM funding profiles that were used to brief the AFMC Resource Board and Commanders Conferences. These briefings led to approval of a new baseline AFMC POM position for presentation to Air Staff. We also supported data and configuration management efforts related to POM data.

ANALYST: Rich Moore

TITLE: *Initial Sparing*

CUSTOMERS: HQ AFMC/LGIR, ASC/AL, and SM-ALC/LII-2

OBJECTIVE: Develop a Readiness-Based Sparing (RBS) system for new weapon systems and other applications. Assist with implementation of this RBS system within the reengineered supply support process.

RESULTS: The Air Force applies RBS when calculating recoverable item spares requirements for peace and war, but in the past, RBS has not been applied to new systems. In support of several distinct sponsors, we developed a spares management system consisting of a FoxPro database linked to the RBS model the Air Force uses to compute war spares.

We will continue assisting our sponsors in implementing the RBS system. The F-22 System Program Office is using the system to compute initial peace and war spares. The requirements re-engineering team has incorporated the system in a revised Air Force provisioning process. Several enhancements will be made to the RBS system to provide projected buy and repair requirements for flying, non-flying, and consumable (Defense Logistics Agency) items. The revised process will improve support, reduce the number of excess spares in transitioning to replenishment and lower customer operating costs.

ANALYSTS: Karen Klinger, Mike Niklas, and Bill Morgan

TITLE: *Global Engagement Wargame Analysis*

CUSTOMER: AFMC XP-AO

OBJECTIVE: The Global Engagement wargame, conducted at Maxwell AFB in 1997, was to have more logistics realism than previous exercises. XP-AO asked us to help achieve this objective by providing estimates of operational aircraft and sorties for a notional war in the year 2010, constrained by a supply system in adverse circumstances.

RESULTS: We obtained schedules for future fleet sizes and war flying programs. The Dyna-METRIC capability assessment model was applied using this flying program information and asset/consumption data. We used a range of supply times to address the impact of delays caused by total or partial loss of transportation due to attacks, chemical weapons, etc. The resulting aircraft availability and sorties were potential constraints on the flying program in the wargame.

ANALYST: Mike Niklas

TITLE: *Weapon System Management Information System (WSMIS) Support*

CUSTOMERS: HQ AFMC/LGI, MAJCOMs

OBJECTIVE: Improve the quality and usefulness of WSMIS by designing enhancements and solving technical problems. Take an active role in providing technical assistance to the WSMIS functional management office, the WSMIS Program Office, the development contractors and users of the system.

RESULTS: We conducted testing and evaluation of the new PC-version of the automated Readiness Spares Package Review software and identified several anomalies. Our familiarity with WSMIS wartime models and data structures enabled us to provide advice on various modeling concerns and solve a number of technical problems. The WSMIS modernization effort is underway, so we are involved in issues related to wartime capability assessments, requirements computations and critical item reporting.

ANALYST: Karen Klinger and Mike Niklas

TITLE: *D035K Order and Ship Time Edits*

CUSTOMER: HQ AFMC/LGSP

OBJECTIVE: Assist HQ AFMC/LGSP in applying a new method for determining proper edit and default values for D035K order and ship time (OST).

RESULTS: We were asked to help compute D035K order and ship time (OST) edit and default values using a method proposed by HQ AFMC/LGS and to offer constructive feedback about the method. We performed the computations using their method and offered suggestions we believe could improve the process. We suggested they use a weighted average instead of a straight average in order to account for an item's activity and keep OST values under some maximum value instead of discarding values. These changes will improve the computed values.

ANALYST: Capt Todd May

TITLE: *D041 Factors Study*

CUSTOMER: HQ AFMC/LGI

OBJECTIVE: Evaluate reparable item demand forecasting methods for potential use in D041.

RESULTS: We used several years of D041 demand data on thousands of aircraft parts to measure the error associated with various forecasting techniques (including moving averages, exponential smoothing, and linear regression). Most of the methods performed similarly. No method was consistently best for all parts. The study will continue into 1998 with the goal being development of a decision support tool that will recommend a forecasting technique for each item based on up to five years of demand history.

ANALYSTS: Steve Bankey, Tom Stafford and Mike Niklas

TITLE: *Funding/Availability Multi-Method Allocator for Spares (FAMMAS)*

CUSTOMERS: HQ USAF/ILSY, HQ AFMC/LGI

OBJECTIVE: Evaluate FAMMAS's ability to adequately measure the impact of various funding decisions on weapon system capability. Air Staff uses FAMMAS to estimate aircraft availability based on Reparable Support Division (RSD) and System Support Division (SSD) funding and requirements.

RESULTS:

We developed a research version of FAMMAS by using EXCEL to model its availability algorithm. This version will allow us to run excursions and test the funding parameters in the Windows 95 environment. FAMMAS was developed for the Windows 3.1 environment and will not run in Windows 95.

We exercised FAMMAS to determine if it can help allocate RSD Buy, RSD Repair and SSD Buy when the total funding is less than the requirement. We ran several excursions and concluded that FAMMAS is too insensitive to large funding changes to be useful. We briefed these results and our conclusions to HQ USAF/IL and to the Engine Summit in October 1997.

ANALYST: Tom Stafford

TITLE: *Scheduling Methodology for Management Level Review (MLR) Boards*

CUSTOMER: HQ AFMC/DPAQ

OBJECTIVE: Reduce the amount of time a member must be present at an MLR Board. Given a member will commit a certain amount of time to each board ("sunk cost"), arrange the board member's sequence of boards to reduce his/her total idle time.

RESULTS: We conducted this study as a result of the analyst's personal involvement in a MLR board. He noted the difficulty in scheduling eleven review boards to reduce the amount of idle time the eighteen board members (Col to LGen) must endure. He devised a five-step methodology that incorporates the criteria, keeps the scheduler on track and reduces idle time. His methodology resulted in 7% less total idle time across all board members. The number of members with no idle time increased from three to four. Of the four generals involved, the number with no idle time increased from two to three while the remaining general's idle time decreased from seven hours to less than two. We provided the methodology to the office that organizes MLR boards.

ANALYST: Capt Todd May

The Program For 1998:

We plan to devote a greater proportion of our efforts to business areas other than supply and maintenance, although much of our work will continue to be directed toward improving the management of weapon system spare parts.

Our studies will include analyses of statistical information to facilitate process improvements, and providing guidance on sample sizes to reduce data collection workload. We will also focus on methods to determine requirements, allocate resources, execute support actions and assess impact.

In addition, we will continue to respond to requests for short-term support and consultation on various issues.

Acronyms and Systems

2LM	Two Level Maintenance
2MRC	Two Major Regional Conflicts
AAM	Aircraft Availability Model
AAPM	Aircraft Availability Procurement Model
ABCS	Automated Budget Compilation System
ABDR	Aircraft Battle Damage Repair
ACC	Air Combat Command
ACIM	Availability Centered Inventory Model
ACSC	Air Command Staff College
AETC	Air Education and Training Command
AFAA	Air Force Audit Agency
AFIT	Air Force Institute of Technology
AFLMA	Air Force Logistics Management Agency
AFMC	Air Force Materiel Command
AFSAC	Air Force Security Assistance Center
AFSEB	Air Force Stockage Effectiveness Board
AIS	Automated Induction System
ALC	Air Logistics Center
ALT	Administrative Lead Time
AMC	Air Mobility Command
AOB	Annual Operating Budget
API	Applications, Programs, and Indentures
APU	Auxiliary Power Unit
ARROWS	Aviation Retail Requirements Oriented to Weapon Replaceable Assemblies
ASM	Aircraft Sustainability Model
AWM	Awaiting Maintenance
AWP	Awaiting Parts
BCR	Baseline Change Request
BCS	Bench Check Serviceable
C4I	Command, Control, Communication, Computer, and Intelligence
C-Ratings	Combat Ratings
CA	Cost Authority
CAIG	Cost Analysis Improvement Group
CAMS	Core Automated Maintenance System
CEMS	Comprehensive Engine Management System
CENTCOM	Central Command
CIM	Corporate Information Management
CLRU	Consumable Line Replaceable Unit
CLS	Central Leveling Summary
CLS	Contractor Logistics Support
CLSS	Combat Logistics Support Squadron
COBRA	Cost of Base Realignment Actions
CONUS	Continental United States
COTS	Commercial-Off-The-Shelf

CPU	Central Processing Unit
CREP	Contract Repair Enhancement Program
CRI	Consolidated Repairable Inventory
CSE	Common Support Equipment
CSI	Consolidated Serviceable Inventory
CSIS	Central Secondary Item Stratification
CSMS	Combat Supplies Management System
CSR	Comm-Computer Systems Requirement Document
CVP	Conformance Verification Program
D028	Central Leveling System
D035	Stock Control System
D035A	Item Manager Wholesale Requisition Process
D035C	Recoverable Assembly Management Process
D035E	Readiness-Based Leveling System
D035K	Wholesale and Retail Receiving and Shipping Process
D041	Recoverable Item Requirements System
D042	Comprehensive Engine Management System
D087C	Sustainability Assessment Module
D087J/K	AFMC EXPRESS Production System
D104	Worldwide Stock Balance & Consumption System
DDM	DRIVE Distribution Module
DDR	Daily Demand Rate
DLA	Defense Logistics Agency
DLSIE	Defense Logistics System Information Exchange
DMAG	Depot Maintenance Activity Group
DMBA	Depot Maintenance Business Area
DMIF	Depot Maintenance Industrial Fund
DMMIS	Depot Maintenance Management Information System
DMRD	Defense Management Review Decision
DMSC	Depot Maintenance Support Center
DoD	Department of Defense
DR	Deficiency Report
DRC	Dynamics Research Corporation
DRCQ	Depot Repair Cycle Quantity
DREP	Depot Repair Enhancement Program
DRIVE	Distribution & Repair in Variable Environments
DSO	Direct Support Objective
DSOR	Dual Sources of Repair
DTDRIVE	DeskTop DRIVE
Dyna-METRIC	Dynamic Multi-Echelon Technique for Recoverable Item Control
EA	Executive Agent
EEIC	Element of Expense Investment Code
EIS	Executive Information System
ENMCS	Engine Not Mission Capable – Supply
EOQ	Economic Order Quantity
EOQ/VSL	Economic Order Quantity/Variable Safety Level

EPP	EXPRESS Priority Preprocessor
ERO	Engine Review Organization
EXPRESS	Execution and Prioritization of Repair Support System
FAMMAS	Funding/Availability Multi-Method Allocator for Spares
FD	Functional Description
FMS	Foreign Military Sales
FOC	Full Operating Capability
GAO	General Accounting Office
GOSG	General Officer Steering Group
GPSS	General Purpose Simulation System
GTACS	Ground Theater Air Control System
GWAM	Get Well Assessment Module
HOWMAL	How Malfunction
ICS	Interim Contractor Support
IM	Item Manager
IMDE	Integrated Model Development Environment
IMP	Inventory Management Program
IOC	Initial Operating Capability
IPD	Integrated Product Development
IPT	Integrated Process Team
IRD	Initial Requirements Determination
IREP	Intermediate Repair Enhancement Program
IRP	Inventory Reduction Plan
IRSP	In-place Readiness Spares Package (formerly BLSS)
IWIPS	International Weapon Item Projection System
IWSM	Integrated Weapon System Management
JEIM	Jet Engine Intermediate Maintenance
JEMS	Jet Engine Management Simulator
JLSC	Joint Logistics Systems Center
JR	Job-Routed
LAMs	Logistics Assessment Models
LCOM	Logistics Composite Model
LL	Lean Logistics
LMI	Logistics Management Institute
LMS	Logistics Management System
LRU	Line Replaceable Unit
M&S	Models & Simulations
MAJCOM	Major Command
MC	Mission Capability
MDS	Mission Design Series
METRIC	Multi-Echelon Technique for Recoverable Item Control
MIC	Maintenance Inventory Center
MICAP	Mission In-Capable
MM	Materiel Manager
MRC	Major Regional Conflict
MRP	Material Requirements Planning

MRSP	Mobility Readiness Spares Package (formerly WRSK)
MSOR	Multiple Sources of Repair
MSRP	Materiel Stock Division
MTBD	Mean Time Between Demands
MTBF	Mean Time Between Failure
NIIN	National Item Identification Number
NRTS	Not Repairable This Station
NSN	National Stock Number
O&M	Operations & Maintenance
O&ST	Order and Ship Time
OA	Obligation Authority
OCM	On-Condition Maintenance
OIM	Organizational Intermediate Maintenance
OPR	Office of Primary Responsibility
OR	Operations Research
OSD	Office of the Secretary of Defense
OWLP	Overseas Workload Program
PA	Program Authority
PAA	Primary Aircraft Authorized
PACAF	Pacific Air Forces
PARS	Prioritization of Assets in Repair
PC	Personal Computer
PD	Product Directorate
PLT	Production Lead Time
PMC	Propulsion Managers Conference
PMO	Program Management Office
POM	Program Objective Memorandum
PPBS	Planning, Programming and Budgeting System
PRS	Propulsion Requirements System
PSE	Plan for Sustaining Engineering
QEC	Quick Engine Change
QPA	Quantity per Application
RADM	Resource Allocation Decision Model
RBIRD	Readiness Based Initial Requirements Determination
RBL	Readiness Based Leveling
RBS	Readiness Based Sparing
RDB	Requirements Data Bank
REALM	Requirements/Execution Availability Logistics Module
REMIS	Reliability & Maintainability Information System
RIPIT	Requirements Interface Process Improvement Team
ROME	Reliability Operations Maintenance Engineering
RRT	Required Resupply Time
RSD	Reparable Stock Division
RSP	Readiness Spares Package
RTF	Readiness Task Force
SAM	Sustainability Assessment Module

SAMIS	Security Assistance Management Information System
SB&CR	Stock Balance and Consumption Report
SBSS	Standard Base Supply System
SC&D	Stock Control and Distribution
SCM	Supply Chain Management
SCP	Support Center Pacific
SCS	Stock Control System
SDF	Statistical Demand Forecasting
SECDEF	Secretary of Defense
SEMR	Sustainment Executive Management Report
SESAME	Selected Essential Item Stockage for Availability Method
SFDLR	Stock Funding of Depot Level Repairables
SMBA	Supply Management Business Area
SMG	Supply Management Group
SMMC	Simultaneous Multi-Echelon, Multi-Indenture Computation
SOF	Special Operations Forces
SOR	Source of Repair
SORCE	Simulation of Removals of Components & Engines
SOS	Source of Supply
SOW	Statement of Work
SPD	System Program Director
SPO	System Program Office
SRAN	Stock Record Account Number
SRU	Shop Replaceable Unit
SSC	Supply Service Center
SSD	System Support Division
STOM	Supply to Maintenance
TASC	The Analytical Sciences Corporation
TAI	Total Aircraft Inventory
TNMCS	Total Not Mission Capable – Supply
TQM	Total Quality Management
UCT	Unit Cost Target
UMMIPS	Uniform Materiel Movement & Issue Priority System
VSL	Variable Safety Level
WINLAM	Windows Integrated Logistics Assessment Model
WFA	Working Fund Account
WRM	War Readiness Materiel
WSAM	Weapon System Availability Model
WSMIS	Weapon System Management Information System
WSPAR	Weapon System Program Assessment Review

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Distribution List

HQ AFMC		ALCs		AF ACADEMY/DF	1
CC	1	OC-ALC/FM	1		
CV	1	OC-ALC/LI	1	AFIT/EN	1
AQ	1	OO-ALC/FM	1	AFIT/LG	1
DP	1	OO-ALC/FMD	1	AFIT/LAC	1
DR	1	OO-ALC/LA	1	AFIT/YCL	1
DRD	1	SA-ALC/FM	1		
DRE	1	SA-ALC/LFTE	1	AIR UNIVERSITY/EC	1
DRM	1	SM-ALC/FM	1		
DRT	1	WR-ALC/FM	1	DTIC	2
DRW	1				
DRX	1	ASC/AL	1	DLSIE	2
EN	1				
FM	1	AFSAC/CC	1	AMXSY-LM	1
FMO	1				
FMR	1	HQ USAF		RAND Corp.	1
HO	1	ILM	1		
IG	1	ILS	1	LMI	1
LG	1	ILX	1		
LGI	5	SC	1		
LGL	1	XOC	1		
LGP	1				
LGS	1	AFAFC/CC	1		
PA	1				
PK	1	AFLMA			
PKL	1	CC	1		
SC	1	LGM	1		
XP	3	LGS	1		
SAO/XPS	50	LGT	1		
		LGX	1		
MSG		LGY	1		
CC	1	XP	1		
EN	1				
SXW	1	AFSAA/SA	1		
		ACC/LG	1		
		AMC/LG	1		
		AETC/LG	1		
		DLA/LO	1		
		PACAF/LG	1		
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